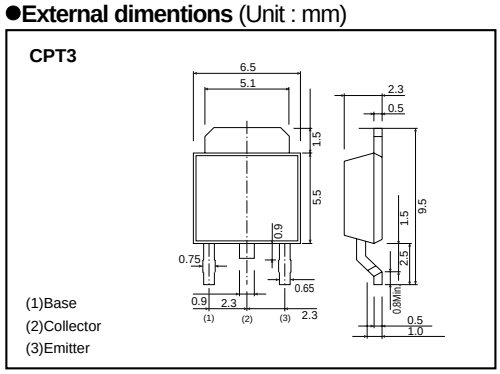
Low $V_{CE(sat)}$ Transistor (Strobe flash) (–20V, –10A)

2SA1834

●Features

1) Low saturation voltage,
   typically $V_{CE(sat)}$ = –0.16V at I_C / I_B= –4A / –50mA.
2) High current capacity, typically I_C= –10A for DC operation and –15A for 10ms pulse.
3) Complements the 2SC5001.

●External dimentions (Unit : mm)



●Packaging specifications and h_{FE}

Type	2SA1834
Package	CPT3
h_{FE}	RS
Code	TL
Basic ordering unit (pieces)	2500

●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit	
Collector-base voltage	V_{CBO}	–30	V	
Collector-emitter voltage	V_{CEO}	–20	V	
Emitter-base voltage	V_{EBO}	–6	V	
Collector current	I_C	–10	A	
	I_{CP}	–15	A	*
Base current	I_B	–2	A	
Collector power dissipation	P_C	1	W	
		10	W(Tc=25°C)	
Junction temperature	Tj	150	°C	
Storage temperature	Tstg	–55 to +150	°C	

* Single pulse Pw=10ms

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions	
Collector-base breakdown voltage	BV_{CBO}	–30	–	–	V	I_C=–50μA	
Collector-emitter breakdown voltage	BV_{CEO}	–20	–	–	V	I_C=–1mA	
Emitter-base breakdown voltage	BV_{EBO}	–6	–	–	V	I_E=–50μA	
Collector cutoff current	I_{CBO}	–	–	–1	μA	V_{CB}=–20V	
Emitter cutoff current	I_{EBO}	–	–	–1	μA	V_{EB}=–5V	
Collector-emitter saturation voltage	$V_{CE(sat)}$	–	–0.16	–0.25	V	I_C/I_B=–4A/–0.05A	*
Base-emitter saturation voltage	$V_{BE(sat)}$	–	–0.9	–1.2	V	I_C/I_B=–4A/–0.05A	*
DC current transfer ratio	h_{FE1}	180	–	560	–	V_{CE}=–2V , I_C=–0.5A	*
	h_{FE2}	82	–	–	–	V_{CE}=–2V , I_C=–4A	*
Transition frequency	f_T	–	150	–	MHz	V_{CE}=–5V , I_E=1.5A , f=50MHz	
Output capacitance	Cob	–	220	–	pF	V_{CB}=–10V , I_E=0A , f=1MHz	

* Measured using pulse current.

●**Electrical characteristics** (Ta=25°C)

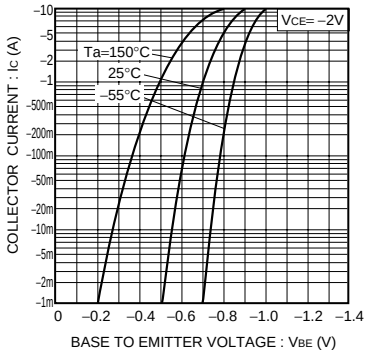


Fig.1 Ground emitter propagation characteristics

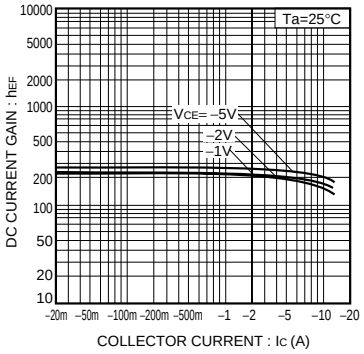


Fig.2 DC current gain vs. collector current(Ⅰ)

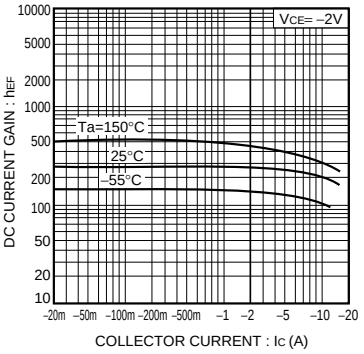


Fig.3 DC current gain vs.collector current (Ⅱ)

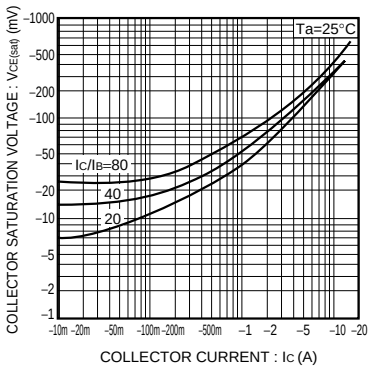


Fig.4 Collector-emitter saturation voltage vs. collector current (Ⅰ)

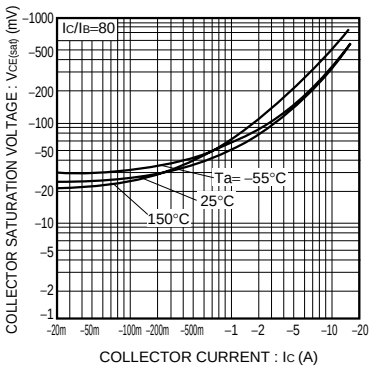


Fig.5 Collector-emitter saturation voltage vs. collector current (Ⅱ)

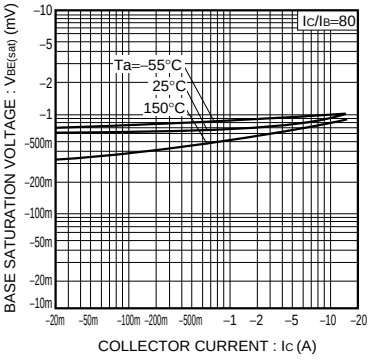


Fig.6 Base-emitter saturation voltage vs. collector current

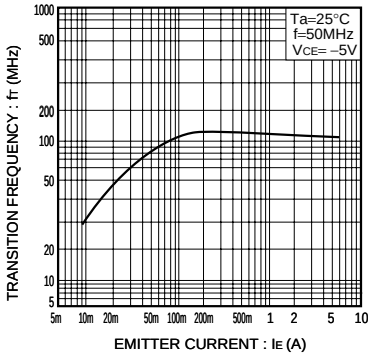


Fig.7 Gain bandwidth product vs. emitter current

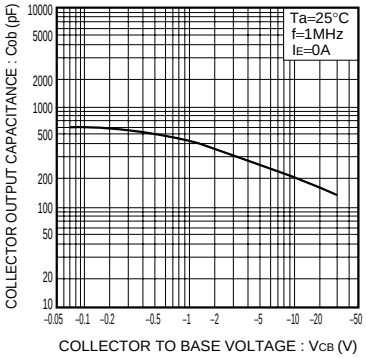


Fig.8 Collector output capacitance vs. collector-base voltage

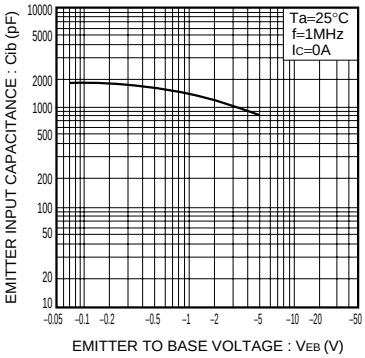


Fig.9 Emitter input capacitance vs. emitter-base voltage

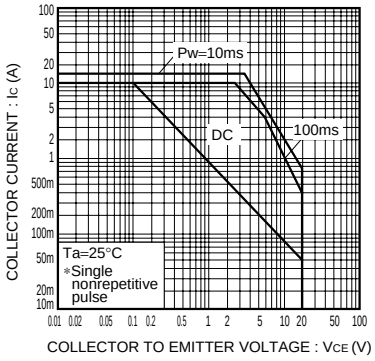


Fig.10 Safe operating area

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